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Mix polythiol monomers in the presence of an excess of polyvinyl monomers Mix polyvinyl monomers in the presence of an excess of polythiol monomers

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Photopolymerize to form polyvinyl oligomers

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Photopolymerize to form polythiol oligomers





Mix polyvinyl oligomers and polythiol oligomers to obtain a first mixture

D

Mix the first mixture with one or more fillers and a photoinitiator to form a second mixture

Û

Package the second mixture in a container based on the color of the one or more fillers

IJ

Dispense the second mixture and shape into a dental prosthesis

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Dispense the second mixture and shape into a dental prosthesis; then photopolymerize

FIGURE 1

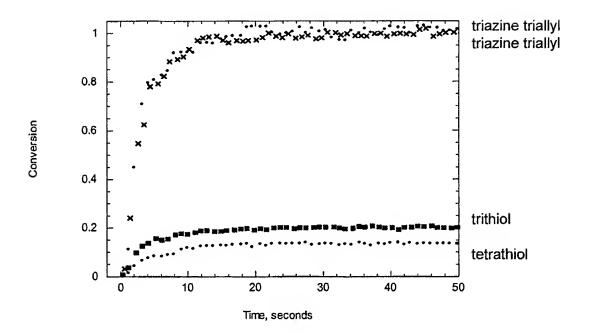


FIGURE 2

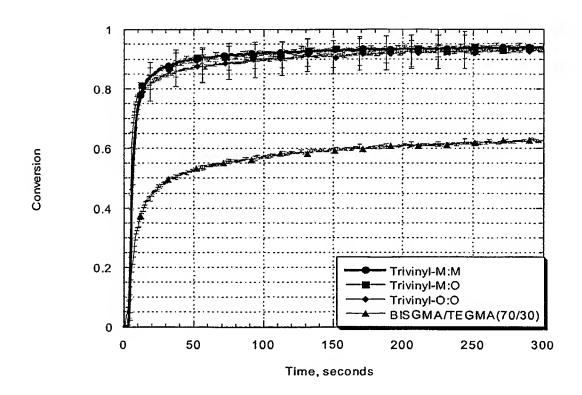


FIGURE 3

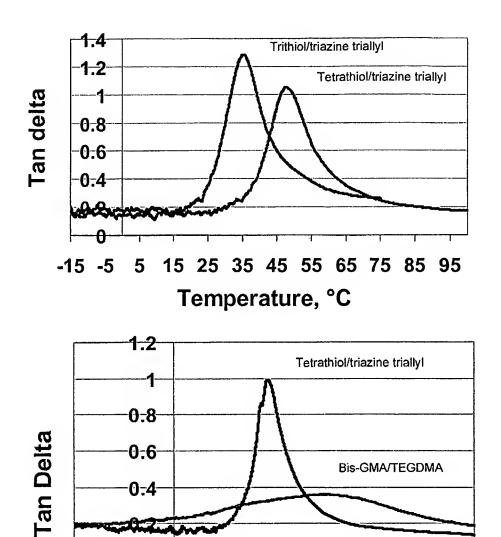


FIGURE 4

30

-20

5

-45

**55** 

Temperature, °C

80

105

130

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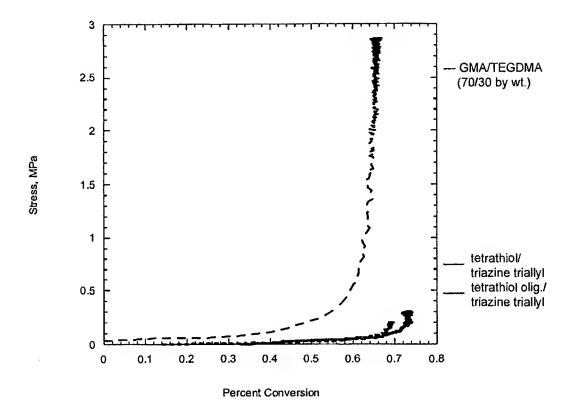


FIGURE 5

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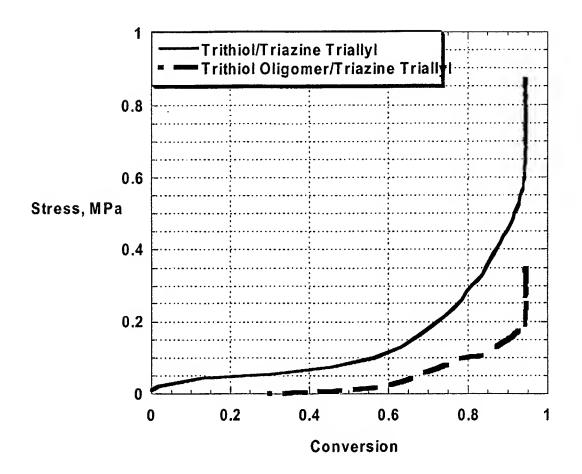


FIGURE 6

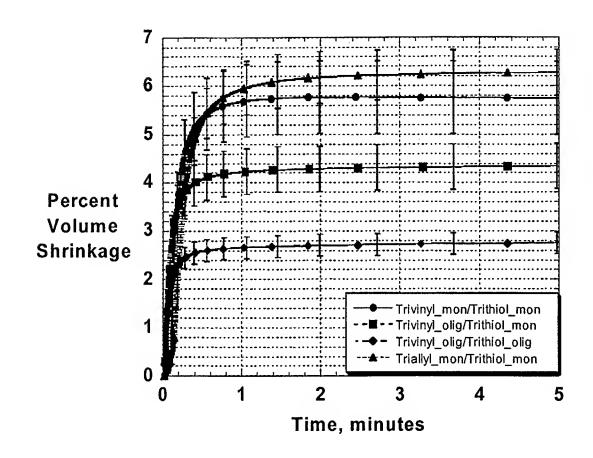


FIGURE 7

	thiol	thiol	ene
ene monomer	monomer	conversion	conversion
triallyl	trithiol	95.2 ± 2.7	97.6 ± 2.9
O-triallyl	trithiol	87.3 ± 2.7	94.5 ± 1.8
trivinyl	trithiol	96.6 ± 1.5	93.8 ± 0.8
O-trivinyl	trithiol	95.7 ± 5.8	95.1 ± 4.5
O-trivinyl	O-trithiol	81.3 ± 0.4	85.8 ± 5.6
triazine triallyl	trithiol	81.4 ± 1.6	95.5 ± 0.8
triazine triallyl	O-trithiol	86.1 ± 1.4	84.5 ± 2.20
triazine triallyl	tetrathiol	74.2 <sup>±</sup> 1.1	88.9 ± 2.1
triazine triallyl	O-tetrathiol		

FIGURE 8A

ene monomer	thiol monomer	Percent Volume Shrinkage
triallyl	trithiol	$6.53 \pm 0.58$
trivinyl	trithiol	5.71 ± 0.75
O-trivinyl	trithiol	4.02 ± 0.18
O-trivinyl	O-trithiol	2.53 ± 0.40
triazine triallyl	trithiol	7.2 <sup>±</sup> 0.16
triazine triallyl	O-trithiol	3.33 <sup>±</sup> 0.62
triazine triallyl	tetrathiol	6.07 ± 0.58
triazine triallyl	O-tetrathiol	2.76 <sup>±</sup> 0.41

FIGURE 8B

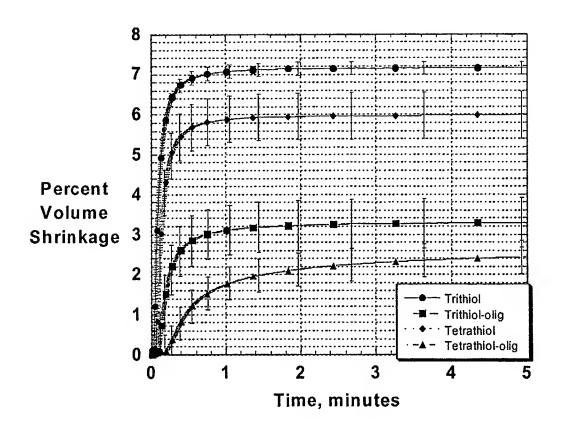


FIGURE 9